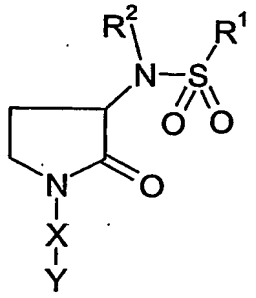
Claims

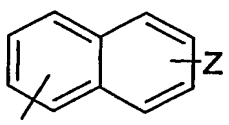
1. A compound of formula (I):

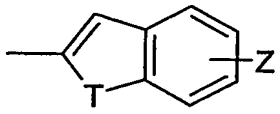


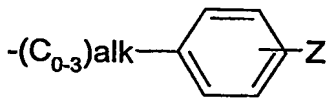
(I)

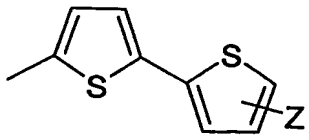
wherein:

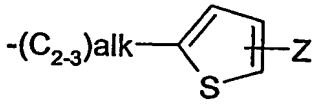
R^1 represents a group selected from:











each ring of which optionally contains a further heteroatom N,
Z represents an optional substituent halogen,
alk represents alkylene or alkenylene,
T represents S, O or NH;

R^2 represents hydrogen, -C_{1-6}alkyl, -C_{1-3}alkylCONR^{a}R^b, -C_{1-3}alkylCO$_2$$C_{1-4}$alkyl, -CO$_2$$C_{1-4}$alkyl or -$C_{1-3}$alkylCO$_2$H;

R^a and R^b independently represent hydrogen, -C_{1-6}alkyl, or together with the N atom to which they are bonded form a 5-, 6- or 7- membered non-aromatic heterocyclic ring

optionally containing an additional heteroatom selected from O, N or S, optionally substituted by C_{1-4}alkyl, and optionally the S heteroatom is substituted by O, i.e. represents $S(O)_n$;

n represents 0-2;

X represents phenyl or a 5- or 6- membered aromatic heterocyclic group containing at least one heteroatom selected from O, N or S, each of which is optionally substituted by 0-2 groups selected from: halogen, -C_{1-4}alkyl, -C_{2-4}alkenyl, -CN, -CF_3, -NR^aR^b, -C_{0-4}alkylOR^e, -$C(O)R^f$ and -$C(O)NR^aR^b$;

R^e represents hydrogen or -C_{1-6}alkyl;

R^f represents -C_{1-6}alkyl;

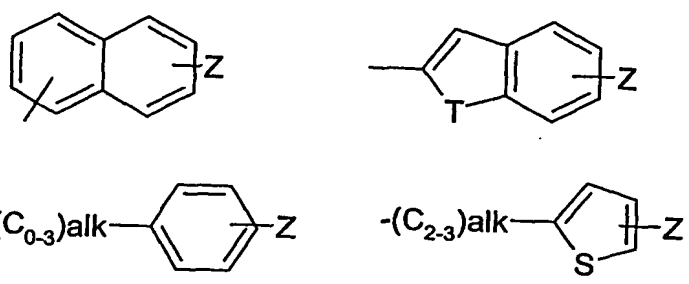
Y represents a group $-C(R^x)(R^z)C_{0-2}$alkylNR^cR^d;

R^x represents C_{1-4}alkyl optionally substituted by halogen;

R^z represents hydrogen or C_{1-4}alkyl optionally substituted by halogen;

R^c and R^d independently represent hydrogen, -C_{1-6}alkyl, -C_{1-4}alkylOH, or together with the N atom to which they are bonded form a 4-, 5-, 6- or 7- membered non-aromatic heterocyclic ring, the 5-, 6- or 7- membered non-aromatic heterocyclic ring optionally containing an additional heteroatom selected from O, N or S, optionally substituted by C_{1-4}alkyl;
and/or pharmaceutically acceptable derivative thereof.

2. A compound according to claim 1 wherein R^1 represents a group selected from:



each ring of which optionally contains a further heteroatom N,
Z represents an optional substituent halogen,

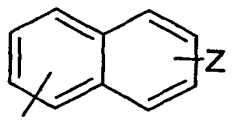
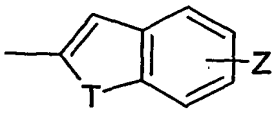
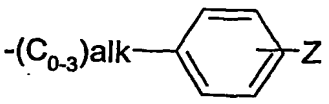
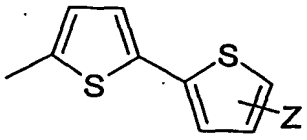
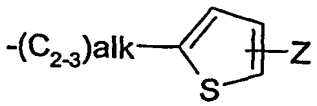
alk represents alkylene or alkenylene,
T represents S, O or NH
and/or pharmaceutically acceptable derivative thereof.

3. A compound according to claim 1 or claim 2 wherein R^2 represents hydrogen and/or pharmaceutically acceptable derivative thereof.

4. A compound according to any one of claims 1-3 wherein X represents phenyl or a 5- or 6- membered aromatic heterocyclic group containing at least one heteroatom selected from O, N or S, each of which is optionally substituted by 0-2 groups selected from: halogen, $-C_{1-4}$alkyl and $-NR^aR^b$ and/or pharmaceutically acceptable derivative thereof.

5. A compound according to any one of claims 1-4 wherein Y represents a group $-C(R^x)(R^z)NR^cR^d$ and/or pharmaceutically acceptable derivative thereof.

6. A compound according to claim 1 wherein R^1 represents a group selected from:

each ring of which optionally contains a further heteroatom N,
Z represents an optional substituent halogen,
alk represents alkylene or alkenylene,
T represents S, O or NH;

R^2 represents hydrogen, $-C_{1-6}$alkyl, $-C_{1-3}$alkylCONR^{a}R^b, $-C_{1-3}$alkylCO_2C_{1-4}alkyl, $-CO_2C_{1-4}$alkyl or $-C_{1-3}$alkylCO_2H;

R^a and R^b independently represent hydrogen, $-C_{1-6}$alkyl, or together with the N atom to which they are bonded form a 5-, 6- or 7- membered non-aromatic heterocyclic ring

optionally containing an additional heteroatom selected from O, N or S, optionally substituted by C_{1-4}alkyl, and optionally the S heteroatom is substituted by O, i.e. represents $S(O)_n$;

X represents phenyl or a 5- or 6- membered aromatic heterocyclic group containing at least one heteroatom selected from O, N or S, each of which is optionally substituted by 0-2 groups selected from: halogen, -C_{1-4}alkyl, -C_{2-4}alkenyl, -CN, -CF_3, -NR^aR^b, -C_{0-4}alkylOR^e, -$C(O)R^f$ and -$C(O)NR^aR^b$;

R^e represents hydrogen or -C_{1-6}alkyl;

R^f represents -C_{1-6}alkyl;

Y represents a group $-C(R^x)(R^z)C_{0-2}$alkylNR^cR^d;

R^x represents C_{1-4}alkyl optionally substituted by halogen (e.g. CF_3, $-CH_2CF_3$);

R^z represents hydrogen or C_{1-4}alkyl optionally substituted by halogen (e.g. CF_3, $-CH_2CF_3$);

R^c and R^d independently represent hydrogen, -C_{1-6}alkyl, -C_{1-4}alkylOH, or together with the N atom to which they are bonded form a 5- or 6- membered non-aromatic heterocyclic ring optionally containing an additional heteroatom selected from O, N or S, optionally substituted by C_{1-4}alkyl;
and pharmaceutically acceptable derivatives thereof.

7. A compound according to claim 1 selected from:
(*E*)-2-(5-Chloro-2-thienyl)-*N*-(1-{4-[1-(dimethylamino)ethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)ethenesulfonamide;
(*E*)-2-(5-Chloro-2-thienyl)-*N*-(1-{2-fluoro-4-[1-(4-morpholinyl)ethyl]phenyl}-2-oxo-3-pyrrolidinyl)ethenesulfonamide;
(*E*)-2-(5-Chloro-2-thienyl)-*N*-[1-(2-fluoro-4-{1-[(2-hydroxyethyl)(methyl)amino]ethyl}phenyl)-2-oxo-3-pyrrolidinyl]ethenesulfonamide;
(*E*)-*N*-{1-[4-(1-Aminoethyl)-2-fluorophenyl]-2-oxo-3-pyrrolidinyl}-2-(5-chloro-2-thienyl)ethenesulfonamide;
6-Chloro-*N*-(1-{4-[1-(dimethylamino)ethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)-1-benzothiophene-2-sulfonamide;
(*E*)-2-(5-Chloro-2-thienyl)-*N*-((3*S*)-1-{4-[(1*S*)-1-(dimethylamino)ethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)ethenesulfonamide;

6-Chloro-*N*-((3*S*)-1-{4-[(1*S*)-1-(dimethylamino)ethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)-2-naphthalenesulfonamide;
6-Chloro-*N*-((3*S*)-1-{4-[(1*S*)-1-(dimethylamino)ethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)-1-benzothiophene-2-sulfonamide;
(*E*)-2-(5-Chloro-2-thienyl)-*N*-((3*S*)-1-{4-[(1*R*)-1-(dimethylamino)ethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)ethenesulfonamide;
6-Chloro-*N*-((3*S*)-1-{4-[(1*R*)-1-(dimethylamino)ethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)-2-naphthalenesulfonamide;
6-Chloro-*N*-((3*S*)-1-{4-[(1*R*)-1-(dimethylamino)ethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)-1-benzothiophene-2-sulfonamide;
(*E*)-2-(5-Chloro-2-thienyl)-*N*-((3*S*)-1-{4-[(1*R*)-1-(dimethylamino)ethyl]-2,6-difluorophenyl}-2-oxo-3-pyrrolidinyl)ethenesulfonamide;
(*E*)-2-(5-Chloro-2-thienyl)-*N*-((3*S*)-1-{4-[(1*S*)-1-(dimethylamino)ethyl]-2,6-difluorophenyl}-2-oxo-3-pyrrolidinyl)ethenesulfonamide;
(*E*)-2-(5-Chloro-2-thienyl)-*N*-((3*S*)-1-{4-[1-(dimethylamino)propyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)ethenesulfonamide;
(*E*)-2-(5-Chloro-2-thienyl)-*N*-((3*S*)-1-{4-[1-(dimethylamino)-2-methylpropyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)ethenesulfonamide;
(*E*)-2-(5-Chloro-2-thienyl)-*N*-(1-{4-[1-(dimethylamino)-1-methylethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)ethenesulfonamide;
6-Chloro-*N*-(1-{4-[1-(dimethylamino)-1-methylethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)-2-naphthalenesulfonamide;
6-Chloro-*N*-(1-{4-[1-(dimethylamino)-1-methylethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)-1-benzothiophene-2-sulfonamide;
6-Chloro-*N*-(1-{4-[1-(dimethylamino)ethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)-2-naphthalenesulfonamide;
6-Chloro-*N*-(1-{4-[1-(ethylamino)ethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)-2-naphthalenesulfonamide;
6-Chloro-*N*-[1-(4-{1-[ethyl(methyl)amino]ethyl}-2-fluorophenyl)-2-oxo-3-pyrrolidinyl]-2-naphthalenesulfonamide;
6-Chloro-*N*-[1-(2-fluoro-4-{1-[(1-methylethyl)amino]ethyl}phenyl)-2-oxo-3-pyrrolidinyl]-2-naphthalenesulfonamide;
6-Chloro-*N*-[1-(2-fluoro-4-{1-[methyl(1-methylethyl)amino]ethyl}phenyl)-2-oxo-3-pyrrolidinyl]-2-naphthalenesulfonamide;
N-(1-{4-[1-(1-Azetidinyl)ethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)-6-chloro-2-naphthalenesulfonamide;

6-Chloro-*N*-(1-{2-fluoro-4-[1-(1-pyrrolidinyl)ethyl]phenyl}-2-oxo-3-pyrrolidinyl)-2-naphthalenesulfonamide;
6-Chloro-*N*-(1-{2-fluoro-4-[1-(1-piperidinyl)ethyl]phenyl}-2-oxo-3-pyrrolidinyl)-2-naphthalenesulfonamide;
5'-Chloro-*N*-((3*S*)-1-{4-[1-(dimethylamino)ethyl]-2-fluorophenyl}-2-oxo-3-pyrrolidinyl)-2,2'-bithiophene-5-sulfonamide;
(E)-2-(5-Chloro-2-thienyl)-N-((3S)-1-{4-[(1S)-1-(dimethylamino)ethyl]phenyl}-2-oxo-3-pyrrolidinyl)ethenesulfonamide;
(E)-2-(5-Chloro-2-thienyl)-N-((3S)-1-{4-[(1R)-1-(dimethylamino)ethyl]phenyl}-2-oxo-3-pyrrolidinyl)ethenesulfonamide;
6-Chloro-N-((3S)-1-{4-[(1S)-1-(dimethylamino)ethyl]phenyl}-2-oxo-3-pyrrolidinyl)-1-benzothiophene-2-sulfonamide;
6-Chloro-N-((3S)-1-{4-[(1R)-1-(dimethylamino)ethyl]phenyl}-2-oxo-3-pyrrolidinyl)-1-benzothiophene-2-sulfonamide;
(1E)-2-(5-Chloro-2-thienyl)-N-(1-{4-[1-(dimethylamino)ethyl]-2,6-difluorophenyl}-2-oxo-3-pyrrolidinyl)-1-propene-1-sulfonamide;
6-Chloro-N-(1-{4-[1-(dimethylamino)ethyl]-2,6-difluorophenyl}-2-oxo-3-pyrrolidinyl)-1-benzothiophene-2-sulfonamide;
and/or pharmaceutically acceptable derivative thereof.

8. A compound according to any one of claims 1-7 and/or pharmaceutically acceptable derivative thereof for use in therapy.

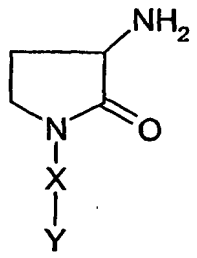
9. A pharmaceutical composition comprising a compound according to any one of claims 1-7 and/or pharmaceuticaly acceptable derivative thereof together with at least one pharmaceutical carrier and/or excipient.

10. Use of a compound according to any one of claims 1-7 and/or pharmaceutically acceptable derivative thereof for the manufacture of a medicament for the treatment of a patient suffering from a condition susceptible to amelioration by a Factor Xa inhibitor.

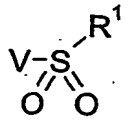
11. A method of treating a patient suffering from a condition susceptible to amelioration by a Factor Xa inhibitor comprising administering a therapeutically effective amount of a compound according to any one of claims 1-7 and/or pharmaceutically acceptable derivative thereof.

12. A process for preparing a compound of formula (I) which comprises:

(a) reacting compounds of formula (II) or an acid addition salt thereof with compounds of formula (III) where V is a suitable leaving group:



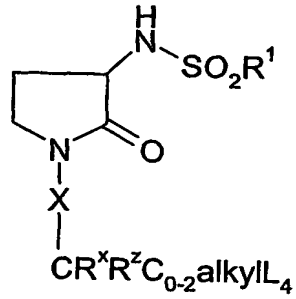
(II)



(III)

OR:

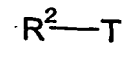
(b) by reacting compounds of formula (XIII) with HNR^cR^d:



(XIII)

OR:

(c) by reacting compounds of formula (I) where R^2 is hydrogen with compounds of formula (XVII):

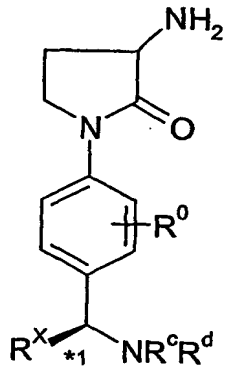


(XVII)

wherein R^2 is $-C_{1-6}$alkyl, $-C_{1-3}$alkylCONR^{a}R^b, $-C_{1-3}$alkylCO_2C_{1-4}alkyl, or $-CO_2C_{1-4}$alkyl and T is a suitable leaving group, optionally followed by removal of the alkyl protecting group where appropriate;

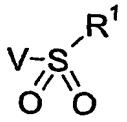
OR:

(d) by reacting a compound of formula (XXV) where X represents phenyl, Y represents–$CH(R^x)NR^cR^d$, R^c and R^d each represent the same C_{1-6}alkyl substituent and R^0 represents 0-2 optional substituents on the phenyl ring selected from: halogen, -C_{1-4}alkyl, -C_{2-4}alkenyl, -CN_1, -CF_3, -NR^aR^b, -C_{0-4}alkylOR^e, -$C(O)R^f$ and $C(O)NR^aR^b$ and/or an acid addition salt thereof:



(XXV)

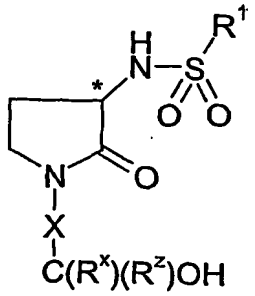
with a compound of formula (III) where V is a suitable leaving group:



(III)

OR:

(e) treatment of compounds of formula (XXXV) where Y represents $-C(R^x)(R^z)NR^cR^d$ and R^x and R^z both represent C_{1-4}alkyl and R^2 represents hydrogen:

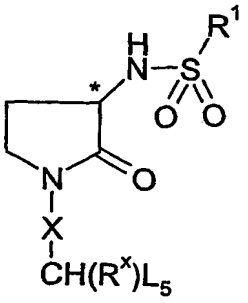


(XXXV)

with hydrogen chloride in the presence of zinc chloride, followed by reaction with HNR^cR^d;

OR:

(f) by reacting compounds of formula (XXXVIIII) where Y represents $-C(R^x)NR^cR^d$, R^x represents C_{1-4}alkyl and R^c and R^d independently represent hydrogen, C_{1-6}alkyl, or together with the N atom to which they are bonded form a 4-, 5-, 6- or 7- membered non-aromatic heterocyclic ring and L_5 is a suitable leaving group:



(XXXVIII)

with HNR^cR^d.